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10/664,822	09/16/2003	Javit A. Drake	08935-297001 / M-5031	3431
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EXAMINER				
HODGE, ROBERT W				
ART UNIT		PAPER NUMBER		
1795				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PATDOCTC@fr.com

Office Action Summary

Application No.

10/664,822

Applicant(s)

DRAKE ET AL.

Examiner

ROBERT HODGE

Art Unit

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 December 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) 34-39 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-893)
Paper No(s)/Mail Date 11/26/08
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 12/10/08 have been fully considered but they are not persuasive. Regarding claims 11 and 24, applicants allege that the permselective polymer coating in Kaschemekat is not methanol impermeable and is not coated onto the support web and only rely on the first citation that was provided to them. However Example 1 discloses that the multilayer composite membrane is prepared by casting an asymmetric membrane on a support web and then it is dip-coated, which means that both sides of the intermediate product has the permselective coating and since applicants are using open claim language Kaschemekat still reads on the claims as recited. Furthermore applicants do not recite the specific material used for the methanol impermeable coating and provide no evidence to show that none of the permselective coatings of Kaschemekat will be methanol impermeable. The instant disclosure states that "cross-linked rubber, a polymer/inorganic composite, a surface treated material such as surface fluorinated high density polyethylene, or other methanol-impermeable material" are considered methanol impermeable materials. Kaschemekat discloses at least silicon rubber and fluoroelastomers both of which fall under the genres of applicants' instant specification and therefore it is submitted that the permselective material of Kaschemekat will be methanol impermeable as evidence by applicants' instant disclosure. Regarding claim 1 applicants allege that Hockaday does not teach "a surface area enhanced planar vaporization membrane disposed in contact with the housing of the fuel cartridge" and rely on figures from U.S. Pre-Grant Publication No.

2001/0049045 for supposed support. However as outlined in the grounds of rejection the figures that are being relied upon are figures 1 and 2 of U.S. Patent No. 6,645,651 and as can be seen in figure 1, the selectively permeable membrane 2 is most definitely in contact with the housing. Regarding figure 2, it should be noted that the reactant regions 9 and 11 are not hovering within the fuel cartridge housing (much like figures 2a and 4a of the instant invention) and therefore the selectively permeable membranes 8 and 12 that entirely surround the reactant regions 9 and 11 will actually be in contact with at least one surface of the fuel cartridge housing due to natural forces such as gravity. The cited area of the grounds of rejection that applicants duplicate in the attorney remarks is used for dependent limitations such as having a multilayer membrane or a cylindrical shape, which are features not recited in independent claim 1, therefore as clarified above Hockaday does in fact anticipate amended claim 1. Regarding the Double Patenting rejections, applicants' arguments are not persuasive for reasons already made of record which will not be reiterated herein.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 2 and 5-10 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,645,651 hereinafter Hockaday.

Hockaday teaches a fuel cartridge comprising a housing 7 with a fuel egress 4 (i.e. exit port) supported by and connected to the housing and a selectively permeable

membrane (2, 8 and 12) disposed in contact with the housing 7 (figures 1 and 2, column 3, lines 55-64, column 5, line 1 – column 6, line 59, column 7, lines 49-50 and column 8, line 24 – column 9, line 40). To further clarify as can be seen in figure 1 of Hockaday, the selectively permeable membrane 2 is in contact with the housing. Regarding figure 2 of Hockaday, it should be noted that the reactant regions 9 and 11 are not hovering within the fuel cartridge housing (much like figures 2a and 4a of the instant invention) and therefore the selectively permeable membranes 8 and 12 that entirely surround the reactant regions 9 and 11 will actually be in contact with at least one surface of the fuel cartridge housing due to natural forces such as gravity. Hockaday further incorporates the fuel Ampoule of the commonly assigned U.S. Pre-Grant Publication No. 2001/0049045 by reference and that U.S. Patent No. 6,645,651 is an improvement upon said fuel ampoule by adding an additional fuel source inside of a fuel cartridge to the previously known fuel ampoule, the previous fuel ampoule of U.S. Pre-Grant Publication No. 2001/0049045 is disclosed as having the following structure; a multilayer composite vaporization membrane 8 and 12, having a cylindrical shape (figures 1 and 3), disposed about a substantial portion of an interior of the housing, that has a selective permeability to allow vaporization of liquid methanol (paragraph [0052]) (i.e. as recited in claim 5) said cartridge also containing a carbonaceous compound (paragraph [0023]), said membrane comprising silicone or silicone impregnated into fiberglass cloth or polyester film, said membrane further comprising a porous substrate made of polyurethane (paragraph [0050]) (see also paragraphs [0014]-[0056]).

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 3, 11-20, 22-30, 32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hockaday in view of U.S. Patent No. 5,069,793 hereinafter Kaschemekat.

Hockaday as discussed above is incorporated herein and U.S. Pre-Grant Publication No. 2001/0049045 further teaches the use of methanol-impermeable coatings on housing walls (paragraph [0041]).

Hockaday does not teach that the composite membrane has a coating of a methanol-impermeable material on one surface.

Kaschemekat teaches a spirally wound multi layer composite membrane comprising a porous substrate (i.e. web), a membrane disposed on a first surface of the substrate (i.e. microporous substrate membrane) and a coating that is a permselective polymer on the other surface of the substrate and said multi layer composite membrane can be a plurality of membranes (column 1, lines 11-52, column 10, lines 33-64 and example 1). Kaschemekat further teaches that different polymers can be chosen for their specific selectivity.

At the time of the invention it would have been obvious to one having ordinary skill in the art to form a multi layer composite membrane having a porous substrate with a membrane on one side and a methanol-impermeable coating on the opposite surface and then spirally wind said multi layer composite membrane in Hockaday as taught by

Kaschemekat, in order to provide a fuel cartridge that will have a higher capacity for methanol storage and improved safety by limiting the amount of methanol that can be leaked out of the container if it should be punctured while at the same time allowing the right amount of fuel through the fuel egress for supply to a fuel cell. It would have also been obvious to provide multiple multi layer composite membrane in Hockaday as taught by Kaschemekat to further increase the capacity for methanol storage and improved safety of the fuel cartridge and also because it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8. It would have also been obvious to use polyurethane for the membrane in Hockaday as taught by Kaschemekat in order to provide a membrane that is properly selected for its specific chemical selectivity and also since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hockaday in view of U.S. Patent No. 5,681,467 hereinafter Solie.

Hockaday as discussed above is incorporated herein.

Hockaday does not teach that the membrane has a series of folds.

Solie teaches spirally wound membrane filters that is folded into predetermined shapes dependent upon the application (figures 1 and 2 and column 3, lines 15-55).

At the time of the invention it would have been obvious to one having ordinary skill in the art to include folding the membrane of Hockaday as taught by Solie, in order

to increase the overall surface area of the membrane to allow more methanol to be released and supplied to the fuel cell.

Claims 21 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hockaday in view of Kaschemekat as applied to claims 11 and 24 above, and further in view of U.S. Patent No. 6,207,369 hereinafter Wohlstadter.

Hockaday as modified by Kaschemekat does not teach that the membrane is a sintered metal coated with a polymer.

Wohlstadter teaches that filters may comprise sintered metals coated with polymer membranes (column 70, line 66 – column 71, line 4).

At the time of the invention it would have been obvious to one having ordinary skill in the art to include a sintered metal coated with a polymer as the membrane for Hockaday as modified by Kaschemekat as taught by Wohlstadter in order to increase the overall rigidity of the fuel cartridge thus making it more durable and also since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140

F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thornton*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-8, 10 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-6, 8 and 12 of copending Application No. 10/664,405. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of the instant invention fully encompass the scope of the claims in copending Application No. 10/664,405; the only difference is the claims in copending Application No. 10/664,405 further limit the structure by adding either a heating element or a bladder and piston arrangement.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 1-3, 5-8 and 10 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 2, 6-9, 11 and 12 of copending Application No. 10/664,818. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of both applications just use different words to claim the same thing.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **ROBERT HODGE** whose telephone number is (571)272-2097. The examiner can normally be reached on 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/R. H./
Examiner, Art Unit 1795

/PATRICK RYAN/
Supervisory Patent Examiner, Art Unit 1795